



# Impact of Congenital Heart Disease in Pregnant Women

Lugara Klaus\*

Department of Cardiology, University of Lausanne, Lausanne, Switzerland

## DESCRIPTION

For practically every woman, pregnancy is a huge life event. Pregnancy, on the other hand, is associated with extra risks for women with heart disease and requires specific treatment. Pregnancies among women with congenital cardiac disease have risen in recent decades and are anticipated to continue to grow in the coming years. Physiological changes in the cardiovascular system during pregnancy may put patients with congenital heart disease at danger if they are unable to adjust. As a result, heart failure, arrhythmias, and deteriorating cardiac conditions may complicate pregnancy and raise the risk of morbidity and death for both mother and child. Congenital cardiac disease is frequently discovered and treated by the time women consider becoming pregnant, allowing for counseling and risk prediction. Congenital heart disease, in contrast to acquired heart disease, has a minimal risk of problems during pregnancy.

Over the previous two decades, pregnancy-related cardiac fatalities have risen. However, the proportion of pregnancy-related mortality ascribed to Congenital Heart Disease (CHD) has remained low. Despite the fact that women with CHD make up the majority of patients in most clinics specializing in heart disease in pregnancy in industrialized nations, this is not the case. This may be explained in part by the fact that the majority of women with CHD are followed at specialist facilities, where they get proper pre-conception testing and counseling, as well as systematic post-partum follow-up. Women with acquired cardiac disease, on the other hand, may have a problem for the first time during pregnancy, such as myocardial infarction, arrhythmia, or aortic dissection. The frequency of ischemic heart disease complicating pregnancies is rising, possibly due to Western society's habit of having children later in life, which has been linked to increased rates of cardiovascular risk factors in these older women.

To anticipate the risk of pregnancy-related issues in the mother and baby, it is critical for women with CHD to have their pulmonary artery pressure, ventricular function, aortic diameter, cyanosis, New York Heart Association (NYHA) functional classification, and Cardiopulmonary Exercise Test (CPX) assessed. History taking, physical examination, chest X-ray,

Electrocardiogram, and echocardiogram are all part of the pre-pregnancy evaluation for individuals with CHD. In women with CHD, a CPX or exercise ECG test is also necessary to assess tolerability and risk of pregnancy and delivery. When necessary, cardiac catheterization and Holter monitoring may be performed.

- During pregnancy and birth, major changes in hemodynamic, hormones, catecholamines, the autonomic nervous system, and psychological state occur.
- CHD-related co-existing hemodynamic
- Abnormalities in the genome
- Aortopathy, underlying heart failure, arrhythmogenicity

The chance of miscarriage is significantly elevated in many women with congenital cardiac disease. Prematurity, low birth weight/small for gestational age, child mortality, and the chance of CHD recurrence are the most common fetal hazards. Prematurity and low birth weight/small for gestational age are linked to the severity of maternal heart disease, and the risk of prematurity and low birth weight/small for gestational age is particularly high in women with the most severe forms, such as univentricular physiology, Eisenmenger physiology, and unrepaired cyanotic defects. Prematurity can occur as a consequence of spontaneous preterm labor or as a result of an early birth induced for maternal (cardiac) causes. In a recent prospective research, however, risk scores derived from these risk variables did not perform well in predicting foetal problems. The link between the complexity of maternal cardiac disease and the fate of the fetus emphasizes the relevance of our multidisciplinary efforts to keep mother haemodynamics and well-being at their best during pregnancy. The uteroplacental blood flow is linked to the fate of the fetus. Recent research shows that maternal haemodynamics in women with CHD are linked to uteroplacental blood flow. Impaired uteroplacental blood flow might be the result of maternal haemodynamic impairment, which could explain why women with CHD have a higher risk of perinatal complications.

Teratogenicity of medications used before to conception should be assessed. Angiotensin-Converting Enzyme Inhibitors (ACEIs) and Angiotensin Receptor Blockers (ARBs) are prohibited

**Correspondence to:** Lugara Klaus, Department of Cardiology, University of Lausanne, Lausanne, Switzerland, E-mail: klaus@lugarra.laus.ch

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during pregnancy due to the risk of harm to the baby. A pre-pregnancy study without ACE inhibitors or ARBs may reveal if these women stay stable during pregnancy. In women who are already pregnant and have a high risk of heart failure, the danger of stopping treatment may exceed the possible fetal concerns, a decision that must be decided by the physician. Because of the risk of low birth weight, beta-blockers can be maintained with careful prenatal monitoring. Because of the risk of birth abnormalities, atenolol is not recommended during

pregnancy. To allow the woman to survive such a dangerous occurrence, life-threatening acute heart failure during pregnancy should be handled as if it were not a pregnancy at all, with no limits. The Pregnancy and Lactation Labelling Rule has superseded the FDA classification, and it may be found on prescription labels as well as on the FDA and EMA websites. This material must be evaluated in order to give counselling and the most up-to-date information about medication during pregnancy.